



有关肺移植后的药物

为肺移植受赠者提供的资讯

本手册介绍了患者在肺移植术后将服用的许多药物。可能不会服用在此列出的所有药物。此外，也可能会服用其他未在此说明的药物。

肺移植后，患者将服用大量的药物。这些药物是为了帮助体内的下列功能：

- 防止排斥新的肺脏（这些药物称为免疫抑制剂）。
- 预防机会性感染（当免疫系统被削弱时可能发生的感染）。
- 控制血压
- 保持骨骼强壮
- 吸收食物中的营养成分



必须严格地按照处方服用所有这些药物。

必须严格地按照医嘱服用所有这些药物。如患者不按指示服用这些药物，可能会导致病情严重，甚至失去移植的肺。

这并不是要令患者惊慌，只是要强调这些药物的重要性。请放心，患者会得到很多支持，以帮助解决任何的问题。

患者在肺移植后需要服用的大部分药物类型在下页中有做解说。有些药物可能不会服用。也可能会服用其他没有列出的药物。

免疫抑制剂

免疫抑制剂是用来防止自身排斥新的肺脏。但是，免疫抑制剂会使患者更容易感染。

这意味着患者还需要服用药物来预防感染。患者须了解感染的征兆，以及当出现这些症状时该如何处理。

他克莫司-Tacrolimus (普乐可复-Prograf 或 FK506)

他克莫司-Tacrolimus 可防止细胞攻击新的肺脏而引起排斥反应。需要每天服用 2 次他克莫司，每次间隔 12 小时。我们会检查患者血液中他克莫司的浓度，而调整剂量以减少副作用。



我們會檢查患者血液中他克莫司的濃度，而調整劑量以減少副作用。

他克莫司的副作用包括：

- 肾脏损害
- 高血压
- 青春痘
- 颤抖
- 镁的流失
- 钾的囤积
- 头痛
- 高血糖

霉酚酸酯莫非特- Mycophenolate Mofetil (骁悉/或非品牌药骁悉胶囊-Cellcept) 及霉酚酸钠- Mycophenolate Sodium (麦考酚酸-Myfortic)

这些药物减少了体内生产白血球的数量，因为白血球会排斥新的肺脏。这些药物的副作用包括：

- 恶心
- 腹泻
- 肝脏损害（罕见，通常可以逆转）
- 头痛

强的松-Prednisone

强的松是一种类固醇药物。患者会一直需要服用类固醇，以防止排斥或治疗急性排斥发作。但是，我们会随着时间来降低服用的剂量。

强的松的副作用包括：

- 体重增加（因食欲增加及水份的囤留）。
- 情绪变化（特别是在移植后立即使用大剂量或治疗急性排斥时）。
- 骨质流失(需服用钙质补剂以减少骨质流失)
- 肌肉乏力(运动可减轻肌肉乏力)
- 脸部及肩部变得更圆润

- 青春痘
- 高血糖(可能需要使用胰岛素来控制血糖)
- 皮肤变薄
- 白内障(眼内晶状体混浊)

可能服用的其他免疫抑制剂

环孢菌素乳液-Cyclosporine Emulsion (Neoral, Gengraf 环孢霉素, 山地明-Sandimmune) 及硫唑嘌呤-Azathioprine (依木兰-Imuran)

如不适合服用他克莫司-Tacrolimus 或霉酚酸酯-mycophenolate, 就可以服用环孢菌素-Cyclosporine 及硫唑嘌呤-azathioprine 来代替。环孢菌素-Cyclosporine 的副作用包括:

- 肾脏损害
- 高血压
- 颤抖
- 镁的流失
- 钾的囤积
- 头痛
- 高血糖
- 毛发过渡生长
- 血脂水平的变化(胆固醇)

硫唑嘌呤-Azathioprine (Imuran)

如患者无法接受霉酚酸酯莫非特, 可能就改服硫唑嘌呤。硫唑嘌呤的副作用包括:

- 恶心
- 减少白血球/或红血球的数量
- 肝脏受损

西罗莫司-Sirolimus (雷帕霉素-Rapamune)

如发生多次急性排斥, 就可能要加服西罗莫司-Sirolimus, 以阻止未来的肺部排斥。如因服用他克莫司-Tacrolimus 而出现肾脏问题, 医生也可能会改开这药。

如同时服用西罗莫司-Sirolimus，即可减少服用他克莫司-Tacrolimus 的剂量（以保护肾脏）。如同时服用环孢菌素-Cyclosporine 和西罗莫司-Sirolimus，则必须在服用环孢素-Cyclosporine 4 小时之后才服用西罗莫司-Sirolimus。因为如同时服用这些药物，身体不能完全吸收和充分发挥药效。

西罗莫司-Sirolimus 的副作用包括：

- 甘油三酯 和胆固醇 水平升高（这些都是血脂）。
- 白细胞、红细胞和血小板较少（血小板是帮助血液凝固的细胞）。
- 伤口愈合较缓慢

抗感染剂和抗真菌剂

制霉菌素液体 Nystatin Liquid (Nilstat) (Nilstat)

制霉菌素有助于预防口腔和咽喉中的酵母菌感（鹅口疮）染。将液体倒入嘴中 60 秒钟，然后吞下。

大多数人能很好地接受这种药物。

克霉唑- Clotrimazole 的副作用包括：

- 恶心呕吐
- 腹泻
- 口感不佳
- 口舌干燥

甲氧苄啶-Trimethoprim / 磺胺甲恶唑-Sulfamethoxazole (复方新诺明-Bactrim SS, 复方磺胺甲恶唑-Septra SS)。

甲氧苄啶-Trimethoprim /磺胺甲恶唑-Sulfamethoxazole 用于预防由真菌肺囊虫 (PCP) 引起的肺炎。如对磺胺过敏，医生可以改开其他药物的处方。

副作用包括：

- 皮疹
- 过敏
- 更容易被晒伤
- 肝脏损害(罕见且一般不会)
- 白血球计数低（罕见且一般不会）。

抗病毒药物

缙更昔洛韦-Valganciclovir (Valcyte)

许多患者在移植后的头 3 个月或至 6 个月内，都会服用缙更昔洛韦-Valganciclovir 来预防 *巨细胞病毒* (CMV) 引起的感染。副作用包括：

- 恶心
- 减少白血球的产量

如患者在最初的 3 个月或至 6 个月之后被巨细胞病毒 (CMV) 感染、医生可能会再开缙更昔洛韦-Valganciclovir 治疗。

阿昔洛韦-Acyclovir (瑞爱克斯-Zovirax)

阿昔洛韦- Acyclovir 用于预防 *单纯疱疹病毒* (HSV) 感染。很少有副作用、但如有，可能包括：

- 恶心及呕吐
- 头痛
- 腹泻
- 关节疼痛

如患者和捐赠者过去都没有感染过单纯疱疹病毒 CMV，则需要服用此药 3 个月。

预防和治疗骨质疏松的补充剂和药物

钙和维生素 D

- *碳酸钙* (品牌名 Tums) 有助于防止强的松-prednisone 可能导致的骨质流失。剂量将取决于饮食中的钙量。
- 维生素 D 有助于身体对钙的吸收和防止骨质流失。
- 还将服用多种维生素以支持一般健康。它还含有一些维生素 D。

阿仑膦酸钠-Alendronate (福善美-Fosamax)

如有骨质流失的高风险，可能需要在肺移植前后服用阿仑膦酸钠-alendronate (福善美-Fosamax)。副作用包括：

- 胃部不适
- 胃灼热

如服用此药:

- 以一杯水送服
- 服用后至少 30 分钟内不要躺下、进食或服用其他药物

可能需要服用的其他药物

- **氧化镁(Magnesium oxide)**可以补充在服用他克莫司-Tacrolimus 或利尿剂时尿液中流失的镁。副作用包括恶心、呕吐和腹泻。
- **美托洛尔-Metoprolol** (Toprol XL, Lopressor) 经常用于降低血压和减缓心率。副作用包括疲劳和头晕。
- **阿司匹林(Aspirin)**可以保护心脏, 有助于防止血栓的形成。如有血栓形成的高风险, 可能需要服用阿司匹林以防止血栓。副作用可能包括胃部不适或出血。阿司匹林需与食物同服, 以减少或避免这些副作用。
- **阿托伐他汀-atorvastatin (Lipitor)、普伐他汀-Pravastatin (Pravachol) 及辛伐他汀-simvastatin (Zocor)**通常用于降低胆固醇。对于肺移植患者, 这些药物用于减少新肺脏的炎症。罕见的副作用可能包括肌肉疼痛或肝脏损伤。
- **奥美拉唑-Omeprazole (Omeprazole) 或泮托拉唑-pantoprazole (Pantoprazole)**可能在移植后使用, 以帮助防止胃部不适、胃灼热, 甚至器官排斥。

药物与食物的相互作用

其他的药物、食物、草药及营养补品可能会影响到身体吸收移植药物的方式。有些药物, 如地尔硫卓-diltiazem (治疗高血压) 和西柚汁, 会导致某些药物在身体内积聚, 从而导致药物浓度过高。即使是紫锥菊-echinacea 或圣约翰草-St. John's wort 等草药也可能导致您的移植药物出现问题。

请告诉我们所有服用的药物和补剂。我们会告诉您那些药物可以在移植后继续服用。

处方药

医保

在肺移植手术之前, 请确知医保将支付或不支付那些药物。如有财务方面的顾虑或需要帮助选择处方药计划, 请与移植团队社工或财务顾问联系。



服用抑制免疫系统的药物时, 不要吃西柚或喝西柚汁。



患者可以使用华大医疗中心的门诊药房或任何喜欢的药房配药。

来医院做移植手术时，请携带：

- 保险卡
- 药房的资讯
- 目前所服用药物的清单

选择药房

患者可以使用 UWMC 门诊药房或任何喜欢的药房配药。

UWMC 门诊药房

如患者想使用 UWMC 药房，请确认医保处方药计划可以与 UWMC 门诊药房合作。即使 UWMC 接受的医保、也并非所有的处方药计划都能与我们的药房合作。

邮购药房

许多患者在移植手术后更愿意使用邮购药房。我们建议在肺移植手术后的第一个月不要使用邮购药房。

邮购药房的药剂师习惯于与各大医保公司打交道，所以许多医保计划对使用这些邮购药房的病人收取较低的共付额。

认知所服用的药物

认知目前正在服用的药物是非常重要的

- 当药物或剂量改变时，请更新药物清单。
- 随身携带药物清单。将药物清单放在钱包或皮包中，或其他经常随身携带的物品中。
- 将所有服用药物的清单交给医疗服务提供者。包括任何维他命、补剂或非处方的药物。在开始或停止服用任何药物之前，请告知肺移植后服务部（206. 598. 5668）。

肺移植药物的样本列表

大多数肺移植患者都会服用第 7 页和第 8 页表格中所列的药物。可使用此表核对医保将支付那些药物，以及患者可能需要支付那些药物。本表不包括所有可能服用的药物。

在移植前，我们会检查患者所有正在服用的药物，并告诉患者那些药物可以继续服用。

请注意：OTC 是 "非处方药" 的意思。无需处方即可购买。

药名	剂量	早餐	午餐	晚餐	睡前	用途/注意事项
Tacrolimus (Prograf) Generic	按处方服用	上午 9 点. ____ 毫克 mg			晚上 9 点 ____ 豪 克 mg	防止排斥 注意事项: 不可吃西柚、及西柚汁。 基于血液水平调整剂量
Mycophenolate 1,000mg (Cellcept) Generic	2 (2 x 500mg) (2 粒 X 每粒 500 毫克)	✓			✓	防止排斥 注意事项: 每次务必在同样的情况下服用, 即: 与食物同服或空腹时服 (且勿有时空腹服用、有时与食物同服)
Prednisone <i>per taper</i> * (Deltasone) Generic	<i>药量递减</i> 35mg 毫克 (7 x 5 mg) (7 粒 x 每粒 5 毫克)	✓				防止排斥 在较高的剂量下, 也用于治疗排斥反应。 注意事项: 与食物同服 <i>*剂量大约每 2 周减少一次, 直到每天服用 10 毫克。</i>
Nystatin liquid (Nilstat) Generic	5 mL 5 毫升	✓	✓	✓	✓	防止真菌感染。(使用 3 至 6 个月。) 搅拌 60 秒。然后吞咽。 饭后服用, 然后在 15 至 30 分钟内不要喝或吃任何东西。
Trimethoprim/Sulfa 80 mg/400 mg (Bactrim, Septra) Generic	1				✓	预防肺囊虫肺部感染 (长期服用)。 以一满杯水送服 注意事项: 涂上防晒霜
Valganciclovir 900 mg (Valcyte) OR Acyclovir 400 mg (Zovirax) Generic	2 (2 x 450mg) (2 粒 X 每粒 450 毫克) 或 1	✓			✓	防止单纯疱疹病毒感染 (服用 3 个月)。 或 防止单纯疱疹病毒或巨细胞病毒感染 (服用 3-6 个月)
Calcium Carbonate (Tums) 1,000 mg Generic, OTC	2 (2 x 500mg) (2 粒 X 500 毫克)	✓			✓	保护骨质
Cholecalciferol (vitamin D3) 2,000 units OTC	1	✓				有助于骨骼对钙的吸收

药名	剂量	早餐	午餐	晚餐	睡前	用途/注意事项
Multivitamin (such as Centrum) Generic, OTC	1	✓				维生素补剂促进身体的健康
Magnesium Oxide 400 mg (MagOx) Generic, OTC	1	✓		✓		补充电解质
Metoprolol 25 mg (Lopressor) Generic	1	✓			✓	减缓心率及降低血压
Aspirin, enteric-coated 81 mg (Ecotrin) Generic, OTC	1	✓				预防血栓的形成 注意事项：与食物同服
Pravastatin 10 mg (Pravachol) OR Atorvastatin 10 mg (Lipitor) Generic	1				✓	降低胆固醇有助于移植肺的存活 注意事项：如发生中度至严重的肌肉酸痛或疼痛，就停止服用

移植前的准备: 联邦医保

联邦医保 A 部分

- 支付患者住院费用

联邦医保 B 部分

- 支付门诊和医疗设备（如轮椅、走路推车等）、肾透析、糖尿病用品以及在诊所获得的药物。
- 如在做移植手术时，联邦医保 Medicare 是患者主要保险，还可以帮助支付 80% 的免疫抑制剂药物处方。患者需要支付 20% 的共付额。
- 福利至少持续 3 年。
- 如患者加入了联邦医保 B 部分，则药房必须为患者的药物向联邦医保 B 部分收费。
- 患者必须确认所选用的药房可以为患者收取联邦医保 B 部分的费用。

联邦医保 D 部分

- 由私人保险公司管理的处方药计划。
- 如患者加入了 联邦医保 B 部分，D 部分就不支付免疫抑制剂的处方药。
- 在向 B 部分呈递免疫抑制药物的账单后，患者可能不必支付 20% 的共付额。
- 每年患者必须支付 D 部分医保的自付额。自付额是指在达到 D 部分开始支付之前、患者所支付的费用。2021 年的自付额为 445 美元。
- 就 2021 年而言，在患者该年的药品总额达到 4,130 美元后，还有一个 2,420 美元的缺口，联邦医保 D 部分不会支付。在此期间，患者必须支付 25% 的药物费用、这个医保缺口被称为“甜甜圈洞”。当患者的承保药品自付费用总额（不包括保费）达到 6,550 美元时，患者就会离开保险缺口。将所有这些金额加在一起，就能找到自付费用。
 - 整个计划年度的年度自付额、共同保险额和共付额
 - 您在保险缺口期间为药品支付的费用（包括您在该阶段没有支付的折扣金额）

要获取详细的资讯

要获取有关联邦医保的详细资讯，请上联邦医保计划搜寻网站：
www.medicare.gov/find-a-plan/questions/home.aspx.

这个网站显示了每月药品费用的详细信息。它可以帮助患者更全面地了解药物保险和自付费用，包括在 "甜甜圈洞" 中的费用。

邮购药房

移植后第一个月

我们建议您在肺移植术后的第一个月**不要**使用邮购药房。

在移植后的一个月內，处方药应在医院门诊药房或当地药房购买。这有助于确保在需要时及时获得药物。

一个月后

第一个月后，请向医保公司查询，以了解医保计划是否有优惠邮购药房的名单，可以为患者的药物提供优惠价。也可以通过邮购获得较大量的处方药。

邮购药房通常对定期需要、且剂量稳定的处方药最为方便。但是，如医生开了新处方、需要即刻服用（如新的免疫抑制剂、止痛药或抗生素的处方），就应该在当地的药房配药。

如住在偏远地区，或使用邮购药房可以节省很多钱，那么邮购药房可能会很有帮助。通常邮购药房提供的服务包括：

- 处方药和非处方药及再补充药物。
- 血压臂带、体温计、血糖仪等医疗器材。

处方药可以由医生通过电话、传真或邮寄通知药房。也可以提供自动续药服务。

邮购药房通常接受医保公司直接付款。联邦医保也可以直接付款，但患者可能仍需支付联邦医保不支付的 20% 免疫抑制药物费用。有些公司也可能接受州医疗补助计划。

邮购时，患者必须支付任何共付额或医保免赔额。患者会收到这些费用的账单。新的或续配的处方药由快递公司直接送到家里。

财务援助网站

下面这些在线资源可以为无力支付移植药物的患者提供帮助。有些需要收取少量的共付金。

- 联邦医保–Medicare: www.medicare.gov
- 药物需求–NeedyMeds: www.needymeds.org
- 药物项目–The Medicine Program: www.themedicineprogram.com
- 药物协助工具 Medicine Assistance Tool:
<https://medicineassistancetool.org>
- 处方药希望–RxHope: www.rxhope.com
- 处方药协助–RxAssist: www.rxassist.org

药厂对患者提供的援助计划

有些药厂有一些计划来协助患者支付药物费用。可以拨打这些免费电话，了解更多有关这些计划的信息。公司名称在括号内。

Prograf (Astellas) 800.477.6472

Cellcept, Valcyte (Genentech) 888.754.7651

Rapamune (Pfizer) 888.327.7787

Neoral, Sandimmune, Myfortic (Novartis) 800.277.2254

华大医疗中心 UWMC 门诊药房的患者辅助也可以提供帮助。可以拨打 206.598.3958 联系该办公室。

您有疑问吗？

我们很重视您的提问。如有疑问或顾虑请与您的医生或医疗提供者联系。

肺脏移植后服务部：
206.598.5668

About Your Medicines

For lung transplant patients

This handout describes many of the medicines you will take after your lung transplant. You may not take all of these medicines. You might also take other medicines that are not described here.

After your lung transplant, you will be taking a lot of medicines. These medicines are given to help your body:

- Prevent rejection of your new lung
- Prevent *opportunistic* infections (infections that can occur when your immune system is weakened)
- Control your blood pressure
- Keep your bones strong
- Use the nutrients in your food



*Always take your medicines **exactly** as they are prescribed.*

All of these medicines must be taken **exactly** as they are prescribed. If you do not take these medicines as directed, you may become very ill or even lose your transplanted lung(s).

This is not meant to scare you. We just want to stress how important these medicines are. Please be assured, there is plenty of support to help with any problems you may have.

Most of the types of medicines you will take after your lung transplant are described on the next pages. There may be some medicines you will not take. And, you may take other medicines that are not described.

Immunosuppressants

Immunosuppressant medicines are given to prevent your body from rejecting your new lung. But, these medicines make it easier for you to get infections.

This means you will also be taking other medicines to prevent infections. You will learn the signs of infection, and what to do when you have these symptoms.



We will check the levels of tacrolimus in your blood and adjust your doses to lessen side effects.

Tacrolimus (Prograf or FK506)

Tacrolimus keeps cells from attacking your new lung and causing rejection. You will take tacrolimus 2 times a day, 12 hours apart. We will check the levels of tacrolimus in your blood and adjust your dose to lessen side effects.

Side effects of tacrolimus include:

- Kidney damage
- High blood pressure
- Acne
- Tremor
- Magnesium loss
- Potassium retention
- Headache
- High blood sugar

Mycophenolate Mofetil (Cellcept or a generic) and Mycophenolate Sodium (Myfortic)

These medicines reduce the number of white blood cells your body produces that would reject your new lung. Side effects include:

- Nausea
- Diarrhea
- Liver damage (rare and usually can be reversed)
- Headache

Prednisone

Prednisone is a steroid medicine. You will always need to take steroids, either to prevent rejection or to treat acute rejection episodes. But, we will lower your dose over time.

Side effects of prednisone include:

- Weight gain (from increased appetite and water retention)
- Mood changes (especially when high doses are used right after transplant or to treat acute rejection)
- Bone loss (you will take calcium supplements to decrease bone loss)
- Muscle weakness (exercise will lessen muscle weakness)
- Face and shoulders become rounder

- Acne
- High blood sugar (you may need to use insulin to control your blood sugar)
- Thinning of your skin
- *Cataracts* (clouding of the lens of your eye)

Other Immunosuppressants You May Take

Cyclosporine Emulsion (Neoral, Gengraf, Sandimmune)

You may take cyclosporine if you cannot handle tacrolimus. Side effects of cyclosporine include:

- Kidney damage
- High blood pressure
- Tremor
- Magnesium loss
- Potassium retention
- Headache
- High blood sugar
- Excess hair growth
- Changes in lipid levels (cholesterol)

Azathioprine (Imuran)

You may take azathioprine if you cannot handle mycophenolate. Side effects of azathioprine include:

- Nausea
- Decrease in white and/or red blood counts
- Liver damage

Sirolimus (Rapamune)

Sirolimus may be added to your medicines to stop lung rejection in the future if you have many acute rejection episodes. It may also be prescribed if you have kidney problems from taking tacrolimus.

You may take less tacrolimus (to protect your kidneys) if you also take sirolimus. If you take both cyclosporine and sirolimus, you **must** take the sirolimus 4 hours after the cyclosporine. This is because your body cannot fully absorb and use these medicines if you take them at the same time.

Side effects of sirolimus include:

- Higher *triglyceride* and *cholesterol* levels (these are blood fats)
- Fewer white blood cells, red blood cells, and *platelets* (cells that help blood clot)
- Slower wound healing

Anti-infectives and Antifungals

Nystatin Liquid (Nilstat)

Nystatin helps prevent yeast infections in your mouth and throat (*thrush*). Swish the liquid around in your mouth for 60 seconds, then swallow.

Most people handle this medicine well. Side effects of nystatin may include:

- Nausea and vomiting
- Diarrhea
- Unpleasant taste
- Dry or irritated mouth

Trimethoprim/Sulfamethoxazole (Bactrim SS, Septra SS)

Trimethoprim/sulfamethoxazole is used to prevent pneumonia caused by *pneumocystis* (PCP), a fungus. If you are allergic to sulfa, your doctor can prescribe other drugs.

Side effects include:

- Rash
- Allergy
- Being more likely to get sunburned
- Liver damage (rare and unlikely)
- Low white blood cell count (rare and unlikely)

Antivirals

Valganciclovir (Valcyte)

Valganciclovir is given to many patients to prevent infections caused by *cytomegalovirus* (CMV) during the first 3 to 6 months after transplant.

Side effects include:

- Nausea
- Producing fewer white blood cells

We may prescribe valganciclovir again after the first 3 to 6 months, if you get a CMV infection.

Acyclovir (Zovirax)

Acyclovir is used to prevent infection with the *herpes simplex virus* (HSV). Side effects are not common but can include:

- Nausea and vomiting
- Headache
- Diarrhea
- Joint pain

This drug is taken for 3 months if neither you nor your donor had ever had a CMV infection in the past.

Supplements and Drugs to Prevent and Treat Bone Loss

Calcium and Vitamin D

- *Calcium carbonate* (in Tums and other products) helps prevent the bone loss that prednisone may cause. Your dose will depend on the amount of calcium in your diet.
- Vitamin D helps your body absorb calcium and prevents bone loss.
- You will also take a multivitamin to support your general health. It also contains some vitamin D.

Alendronate (Fosamax)

If you are at high risk for bone loss, you may need to take *alendronate* (Fosamax) tablets before and after your lung transplant. Side effects include:

- Stomach upset
- Heartburn

If you take this medicine:

- Take it with a full glass of water.
- Do not lie down, eat, or take other medicines for at least 30 minutes after taking it.

Other Medicines You May Take

- **Magnesium oxide** replaces the magnesium that you lose in your urine when you take tacrolimus or diuretics. Side effects include nausea, vomiting, and diarrhea.

- **Metoprolol (Toprol XL, Lopressor)** is often used to lower your blood pressure and slow your heart rate. Side effects include fatigue (feeling very tired) and dizziness.
- **Aspirin** protects your heart and can help keep blood clots from forming. If you are at high risk of clots, you may need to take aspirin to prevent blood clots. Side effects can include upset stomach or bleeding. Always take aspirin with food to lessen or avoid these side effects.
- **Atorvastatin (Lipitor), pravastatin (Pravachol), and simvastatin (Zocor)** are often used to lower cholesterol. For lung transplant patients, these medicines are used to decrease inflammation of the new lungs. Rare side effects may include muscle pain or liver damage.
- **Omeprazole** or **pantoprazole** are used after transplant to help prevent stomach upset, heartburn, and maybe organ rejection.



Do not eat grapefruit or drink grapefruit juice when taking drugs that suppress your immune system.

Drug-Food Interactions

Other drugs, foods, and herbal and nutritional supplements may affect how your body uses your transplant medicines. Some, such as diltiazem (for high blood pressure) and grapefruit juice, cause high levels of some drugs to build up in your body. Even herbs such as echinacea or St. John's wort may cause problems with your transplant medicines.

Please tell us about **all** medicines and supplements you take. We will tell you which ones are safe to keep taking after your transplant.

Prescriptions

Insurance

Before your lung transplant, be sure that you know what medicines your insurance will and will not cover. If you have financial concerns or need help choosing a prescription drug plan, please talk with your transplant team social worker or financial advisor.

When you come to the hospital for your transplant surgery, please bring:

- ***Your insurance card***
- ***Your pharmacy information***
- ***A list of your current medicines, their doses and how you take them***



You may use the UWMC Outpatient Pharmacy or any pharmacy you like to fill your prescriptions.

Choosing a Pharmacy

You may use the UWMC Outpatient Pharmacy or any pharmacy you like to fill your prescriptions.

UWMC Outpatient Pharmacy

If you want to use the UWMC pharmacy, make sure your insurance prescription plan will work with UWMC's Outpatient Pharmacy. Not all prescription drug plans work with our pharmacy, even if UWMC takes your medical insurance.

Mail-order Pharmacies

Many patients prefer to use a mail-order pharmacy after their transplant surgery. We advise you **NOT** to use a mail-order pharmacy the first month after your lung transplant.

Pharmacists at mail-order pharmacies are used to dealing with the major insurance companies, and many insurance plans charge lower copays for patients who use these pharmacies.

Know Your Medicines

It is important that you know what medicines you are taking.

- Update your list when your medicines or doses change.
- Keep a list of your medicines with you. Put your list in your wallet or purse, or something else you always have with you.
- Give all your healthcare providers a list of all the medicines you take. Include any vitamins, supplements, or medicines you bought without a prescription. Call Post Lung Transplant Services at 206.598.5668 **before you start or stop any of your medicines.**

Lung Transplant Medicine Sample Table

Most lung transplant patients take the medicines listed in the table on pages 8 and 9. Use this table to check what drugs your insurance will pay for and which ones you may have to pay for. This list does not include all the medicines you may take.

Before your transplant, we will review all the medicines you are taking and tell you which to keep taking.

Note: *OTC* stands for “over the counter.” It means you can buy this product at your local drugstore without a prescription. Most insurance plans do not pay for OTC medicines.

Drug Name	How Many to Take	Breakfast	Lunch	Dinner	Bedtime	Purpose/Cautions
Tacrolimus (Prograf) <i>Generic</i>	As directed	9 a.m. ____ mg			9 p.m. ____ mg	Prevents rejection. Caution: No grapefruit, pomegranate, or starfruit. No ibuprofen (Advil, Motrin) or naproxen (Aleve, Naprosyn). Dose changes based on blood levels.
Mycophenolate 1,000mg (Cellcept) <i>Generic</i>	2 (2 x 500 mg)	✓		✓		Prevents rejection. Caution: Always take the same way – either with food or without food (not with food sometimes, and without food other times).
Prednisone per taper* (Deltasone) <i>Generic</i>	<i>Per taper:</i> 35 mg (3.5 x 10 mg)	✓				Prevents rejection. At higher dose, also used to treat rejection. Caution: Take with food <i>* Dose is decreased about every 2 weeks until you are taking 10 mg a day.</i>
Nystatin liquid (Nilstat) <i>Generic</i>	5 mL	✓	✓	✓	✓	Prevents fungal infection. (Used for 3 to 6 months.) Swish for 60 seconds. then swallow. Take after meals and then do not drink or eat anything for 15 to 30 minutes.
Trimethoprim/Sulfa 80 mg/400 mg (Bactrim, Septra) <i>Generic</i>	1				✓	Prevents pneumocystis lung infections (used long-term) Take with a full glass of water Caution: Wear sunscreen
Valganciclovir 900 mg (Valcyte) <i>OR</i> Acyclovir 400 mg (Zovirax) <i>Generic</i>	2 (2 x 450 mg) <i>OR</i> 1	✓ ✓		✓		Prevents infection from herpes simplex or cytomegalovirus. (Taken for 3 to 6 months.) <i>OR</i> Prevents infection from herpes simplex (taken for 3 months)
Calcium Carbonate (Tums) 1,000 mg <i>Generic, OTC</i>	2 (2 x 500 mg)	✓		✓		Calcium supplement. Protects bones.
Cholecalciferol (vitamin D ₃) 2,000 units <i>OTC</i>	1	✓				Helps bones absorb calcium.

Drug Name	How Many to Take	Breakfast	Lunch	Dinner	Bedtime	Purpose/Cautions
Multivitamin (such as Centrum) <i>Generic, OTC</i>	1	✓				Vitamin supplement for general health.
Magnesium oxide 400 mg (MagOx) <i>Generic, OTC</i>	1	✓		✓		Electrolyte replacement.
Metoprolol 25 mg (Lopressor) <i>Generic</i>	1	✓			✓	Lowers heart rate and blood pressure.
Aspirin , enteric-coated 81 mg (Ecotrin) <i>Generic, OTC</i>	1	✓				Prevents blood clots. Caution: Take with food.
Atorvastatin 10 mg (Lipitor) <i>Generic</i> OR Pravastatin 10 mg (Pravachol) <i>Generic</i>	1			✓		Lowers cholesterol and may help lung graft survival. Caution: Stop taking if you have moderate to severe muscle aches and pains.

Pre-Transplant Planning: Medicare

Medicare Part A

- Pays for your hospital stay.

Medicare Part B

- Pays for outpatient visits and equipment (such as wheelchairs, walkers, etc.), dialysis, diabetes supplies, and drugs you are given in a clinic.
- Also helps pay for 80% of immunosuppressant drug prescriptions if Medicare is your primary insurance at the time of your transplant. You would pay 20% as your copay.
- Benefits last for at least 3 years.
- If you are enrolled in Medicare Part B, your pharmacy is required to bill Part B for your drugs.
- You must confirm that your pharmacy can bill Medicare Part B for you.

Medicare Part D

- Prescription drug plans that are managed by private insurance companies.
- Part D will not pay for immunosuppressant drug prescriptions if you are enrolled in Part B.
- May not have to pay the 20% copay after Part B is billed for immunosuppressive drugs.
- Each year, you must pay a *deductible* for the Part D program. A deductible is what you pay before Part D starts paying. For 2021, this amount is \$445.
- For 2021, after your and your insurance plan's total drug costs for the year reach \$4,130, there is a gap of \$2,420 that Medicare Part D will not pay. During this period, you must pay 25% of drug costs. This gap in coverage is called the "donut hole." You will leave the coverage gap when your total out-of-pocket cost on covered drugs (not including premiums) reaches \$6,550. Find your out-of-pocket cost by adding together all of these amounts:
 - Yearly deductible, coinsurance, and copayments from the entire plan year
 - What you paid for drugs in the coverage gap (including the discounted amounts you didn't pay in that stage).

To Learn More

To learn more about Medicare, visit the Medicare Plan Finder website at www.medicare.gov/find-a-plan/questions/home.aspx.

This website shows detailed monthly cost information for drugs. It may help you understand your drug coverage and out-of-pocket costs more fully, including costs while you are in the “donut hole.”

Mail-order Pharmacies

First Month After Transplant

We advise you NOT to use a mail-order pharmacy the first month after your lung transplant.

For 1 month after your transplant, your prescriptions should be filled at the hospital outpatient pharmacy or a local pharmacy. This will help ensure that you get your medicines when you need them.

After 1 Month

After the first month, check with your insurance provider to find out if your insurance plan has a list of preferred mail-order services that can provide your medicines at lower cost to you. You may also be able to get a larger supply of your prescription medicines through mail order.

Mail-order pharmacies are often most useful for prescriptions that you need on a regular basis when you are at stable doses. But, if you receive a new prescription that you need right away (such as a prescription for a **new** immunosuppressant medicine, pain medicine, or antibiotic) you should have your prescription filled at your local pharmacy.

Mail-order pharmacies may be very helpful if you live in a rural area, or if you save a lot of money by using them. Services that are usually offered by mail order include:

- Prescription and non-prescription medicine fills and refills
- Medical equipment such as blood pressure cuffs, thermometers, and blood glucose meters

Prescriptions may be phoned in or faxed by your doctor, or mailed. Automatic refill service may also be offered.

Mail-order pharmacies usually accept direct payment from your insurance company. Medicare may also be billed directly, but you may still have to pay for the 20% that Medicare does not pay for immunosuppressant drugs. Some companies may accept state Medicaid programs.

With mail order, you must pay any copays or insurance deductibles. You will be billed for these costs. Processing and delivery of new or refilled prescriptions is made directly to your home by express mail companies.

Websites for Financial Aid

These online resources provide help for people who cannot afford their transplant medicines. Some charge a small copay.

- Medicare: www.medicare.gov
- NeedyMeds: www.needymeds.org
- The Medicine Program: www.themedicineprogram.com
- Medicine Assistance Tool: <https://medicineassistancetool.org>
- RxHope: www.rxhope.com
- RxAssist: www.rxassist.org

Manufacturer Patient Assistance Programs

Some drug companies have programs to help patients be able to afford their medicines. These are toll-free numbers you can call to learn more about these programs. The company name is in parentheses.

Prograf (Astellas)	800.477.6472
Cellcept, Valcyte (Genentech).....	888.754.7651
Rapamune (Pfizer)	888.327.7787
Neoral, Sandimmune, Myfortic (Novartis).....	800.277.2254

Patient Assistance at the UWMC Outpatient Pharmacy may also be able to help. You can reach this resource at 206.598.3958.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Post Lung Transplant
Services: 206.598.5668